Behavior Research Methods & Instrumentation

Editor, *Joseph B. Sidowski*
Department of Psychology
University of South Florida
Tampa, Florida 33620

CONSULTING EDITORS

Doris Aaronson, *New York University*
Norman H. Anderson, *University of California, San Diego*
William R. Biersdorf, *Ohio State University*
J. V. Brady, *Johns Hopkins University*
Clinton Brown, *Maryland State Psychiatric Research Center, Baltimore*
Judson S. Brown, *University of Oregon Medical School*
David A. Grant, *University of Wisconsin, Madison*
Marshall M. Haith, *University of Denver*
Herschel W. Leibowitz, *Pennsylvania State University*
James McGaugh, *University of California, Irvine*
William R. Uttal, *University of Michigan*
Steven G. Vandenberg, *University of Colorado*
William T. Woodard, *University of Hawaii*

Sharon P. Tarver, *Managing Editor*

VOLUME 8

Published bimonthly by
THE PSYCHONOMIC SOCIETY, Inc.
1108 West 34th Street, Austin, Texas 78705

Second Class Postage paid at Austin, Texas 78705
Copyright © 1976 by THE PSYCHONOMIC SOCIETY, Inc.

Behavior Research Methods & Instrumentation
1976, Vol. 8 (6), iii-vii

CONTENTS OF VOLUME 8

Aaronson, D., & Forshee, J. **DEC Users' Group Report: Fifth annual meeting of the National Conference on the Use of On-Line Computers in Psychology, November 5, 1975** 223
Aaronson, D., Grupsmith, E., & Aaronson, M. **The impact of computers on cognitive psychology** 129
Aaronson, M. See Aaronson, D.
Adamson, R. **Apparent motion display** 9
Alain, C., & Avon, G. **A measurement technique for stability as applied in rifle shooting** 5
Ali, J. S. **A portable four-channel cassette recording system for short-term electroencephalogram in the field** 439
Anderson, L. M. See Mackinnon, W. J.
Anderson, R. E. **Technical standards and performance standards in the pursuit of quality** 211
Anderson, R. E. **BRE. A conversational program for bivariate regression and eta** 314
Anstis, S. **Luminance profiles demonstrate nonlinearities of brightness perception** 427
Antonak, R. F. See Bart, W. M.
Armington, J. C. **The Lab-8 computer and quantitative methods** 225
Ashley, T. R. See Chambers, D. L.
Ashley, T. R., Sharp, J. L., & Chambers, D. L. **Tethered insect flight. A computer program to analyze behavioral events** 385
Austin, D. J. See Miklich, D. R.
Avon, G. See Alain, C.
Baker, W. R. **Panel report: Biotechnology Resources Program (BRP)** 57
Barmeier, A. See Stephens, K.
Bart, W. M., Lele, K., & Antonak, R. F. **A computer program for ordering-theoretic data analysis** 399
Bauer, J. A., Jr. See Walker, E.
Belluzzi, J. D. **Use of the TI-700 cassette terminal in the INTERACT system** 245
Berk, R. A., & Campbell, K. L. **A FORTRAN program for Cohen's kappa coefficient of observer agreement** 396
Bird, R. **A computer-controlled system for the recording modification and presentation of two-channel musical stimuli** 24
Blazie, D. B., & Cranmer, T. V. **An audio-tactile display** 491
Bogo V. See Bruner, A.
Brabyn, J. A. See Strelow, E. R.
Breidenstein, C. P. See Sterner, R. T.
Bremser, R. F., Davidson, R. S., & Mortensen, R. M. **A safe signaling device for use in measuring consummatory behavior in the automated aversion therapy of alcoholics** 450
Brown, B., Dewey, M. E., & Day, A. P. **An objective automated method for digitizing pictorial material for computer manipulation** 378
Bruner, A., Gallegos, A. N., & Bogo, V. **Carousel slide-coded projector overheating hazard and a simple repair** 532
Burkhardt, K. J., Jr. **EMPP: An extensible multiprogramming system for experimental psychology** 239
Burkhardt, K. J., Jr., Palmer, J., & Waddington, W. **An intelligent experimental station controller for human experimental psychology** 369
Buschke, H. See Zangen, M.
Cabe, P. A. **An inexpensive glass response key** 341
Campbell, K. L. See Berk, R. A.
Capel, W. C. See Owens, W. H., Jr.
Carpenter, P. A. See Just, M. A.
Carroll, C. D. **MAV: A FORTRAN program for multivariate analysis of variance, profile analysis, and multiple comparisons** 313
Cassady, M., Patterson, M. M., & Roemer, R. **The use of on-line computers in psychobiology** 153
Castellan, N. J., Jr. **Standards: Real-time extensions to programming systems** 207
Chambers, D. L. See Ashley, T. R.
Chambers, D. L., Sharp, J. L., & Ashley, T. R. **Tethered insect flight: A system for automated data processing of behavioral events** 352
Clark, G. R. S. See Strelow, E. R.
Cobez, R. I., & Snapper, A. G. **Interfacing for the SKED system** 73
Cohen, M. M., & Massaro, D. W. **Real-time speech synthesis** 189
Cole, E. B., Johnson, J. H., & Williams, T. A. **When psychiatric patients interact with computer terminals: Problems and solutions** 92
Coston, A. W. See Kahan, J. P.
Covvey, H. D. See Evans, D. R.
Covvey, H. D. See Stenn, P. G.
Cranmer, T. V. See Blazie, D. B.
Csapo, K. See Evans, D. R.
Daniel, W. W. See Youngman, G. H.
Davidson, R. S. See Bremser, R. F.

Day, A. P. See Brown, B.
Dewey, M. E. See Brown, B.
DeWitt, L. J., & Weiss, D. J. **Hardware and software evolution of an adaptive ability measurement system** 104
Dingler, R., Kadden, R. M., & Snapper, A. G. **An introduction to state notation and SKED** 69
Dodd, W. P., & Jones, E. **A modification to a program for the analysis of intragroup interaction to allow interfacing with the SPSS package** 411
Dunlap, W. P. See Hansche, W. J.
Dunlap, W. P. See Konnerth, T. K.
Dunnagan, T. **CONDUIT standards and procedures: A practical experience** 205
Durrett, H. J., Jr. **A simple information management system for use in on-line experimentation** 157
Edgington, E. S., & Strain, A. R. **A computer program for randomization tests for predicted trends** 470
Elton, R. H., & Kjeldsen, A. R. **Monitoring response patterns of individual monkeys living in groups** 481
Erlich, O., & Shavelson, R. **Generalizability of measures: A computer program for two- and three-facet designs** 407
Evans, D. R., Covvey, H. D., Gliksman, L., Csapo, K., & Heseltine, G. F. D. **The automated psychological evaluation system (APES)** 108
Fearnley, S. See Treisman, M.
Ferris, C. See Taerum, T.
Fink, R. K. See Moskowitz, H.
Fischler, I. **Beating the memory drum: Rapid sequential visual presentation (RSVP) on a 4K PDP-8** 233
Flaherty, J. F. **SIMCOL: A FORTRAN IV simulation program for use in the study of coalitional behavior** 468
Flanagan, K. **Data manipulation and reduction in a 32K environment** 247
Forshee, J. See Aaronson, D.
Foster, F. G. See McPartland, R. J. (2)
Fox, S. J. See Galosy, R. A.
Fridlund, A. J., & Leberer, M. R. **An inexpensive integrated circuit intracranial stimulator** 21
Erratum 514
Furedy, J. J., Poulos, C. X., & Schiffman, K. **Logical problems with Prokasy's assessment of contingency relations in classical skin conductance conditioning.** (1975, 7, 521-523)–Erratum 8
Gallegos, A. N. See Bruner, A.
Galosy, R. A., Saffer, S. I., & Fox, S. J. **CARDAT: A computer program for the acquisition and analysis of cardiovascular data** 309
Giannetti, R. A. See Johnson, J. H.
Giannetti, R. A., Klingler, D. E., Johnson, J. H., & Williams, T. A. **The potential for dynamic assessment systems using on-line computer technology** 101
Gliksman, L. See Evans, D. R.
Gordon, L. R. See Howell, D. C.
Grabowski, J., & Sunkin, J. **The "pill popper": A device for drug capsule self-administration by primates** 495
Grubin, M. L. See Walker, E.
Grupsmith, E. See Aaronson, D.
Hamilton, P. V. **A FORTRAN IV program for Rao's test of uniformity in circular distributions** 467
Hansche, W. J., & Dunlap, W. P. **A FORTRAN IV program for computing all possible multiple regressions** 393
Hatcher, M. E., Oakes, T. W., & Kaiser, E. **INFORMATION RETRIEVAL: Program for personalized article retrieval system** 514
Hays, J. E. **A FORTRAN procedure for plotting two-dimensional barycentric simplicia** 515
Helwig, R. A. See Kahan, J. P.
Henry, R. B. **Implementation of experimental designs and storage of results in the PACER system of on-line control** 292
Henry, R. B. **Implementation of experimental procedures in the PACER system of on-line control** 508
Heseltine, G F. D. See Evans, D. R.
Heseltine, G. F. D. See Stenn, P. G.
Hoats, D. L. **An inexpensive electronic switch with adjustable gain** 437
Hofmann, R. J. **Toes** 322
Hofmann, R. J. **A computerized approach for determining equal appearing interval attitude scales** 462
Hoskin, R. K. See Williams, D. B.
Howard, J. **Microprogramming in psychology** 118
Howard, J. H., Jr. See Silverman, E. B.
Howell, D. C., & Gordon, L. R. **Computing the exact probability of an r by c contingency table with fixed marginal tables** 317
Johnson, J. H. See Cole, E. B.
Johnson, J. H., Giannetti, R. A., & Williams, T. A. **Computers in mental health care delivery: A review of the evolution toward interventionally relevant on-line processing.** 83
Johnson, J. H. See Giannetti, R. A.
Johnson, J. H. See Klingler, D. E.
Jones, E. See Dodd, W. P.
Just, M. A., & Carpenter, P. A. **The role of eye-fixation research in cognitive psychology** 139
Kadden, R. M. See Dingler, R.
Kahan, J. P., Coston, A. W., Helwig, R. A., Rapoport, A., & Wallsten, T. S. **A PDP-11/45 program for playing n-person characteristic function games** 165

Kaiser, E. See Hatcher, M. E.
Kaplan, H. L. **Some debugging strategies for assembler-based minicomputer operating systems** 170
Kieras, D. **Staff programmer vs. system: The issues** 174
King, J. F. See Solso, R. L.
Kingsley, S. J. See Livingston, J. W., Jr.
Kjeldsen, A. R. See Elton, R. H.
Klingler, D. E. See Giannetti, R. A.
Klingler, D. E., Johnson, J. H., & Williams, T. A. **Strategies in the evaluation of an on-line computer-assisted unit for intake assessment of mental health patients** 95
Konnerth, T. K., & Dunlap, W. P. **A FORTRAN IV computer program for partitioning chi-square contingency tables** 412
Krausman, D. T. **The microcomputer kit: An excellent small system development tool** 501
Kritzer, H. M. **NONMET II: A program for the analysis of contingency tables and other types of nonmetric data by weighted least squares** 320
Kupfer, D. J. See McPartland, R. J. (2)
Lane, D. M., & Powell, R. S. **N-Way MANOVA: A BASIC program for minicomputers** 382
Leberer, M. R. See Fridlund, A. J.
Leberer, M. R., McKnight, R. R., & Wirth, P. **A method for implantation of a chronically indwelling intravenous catheter in the pigeon** 11
Lele, K. See Bart, W. M.
Leventhal, C. **3-D reconstruction of identified nerves in genetically identical animals (abstract)** 51
Levine, M. W. See Shefner, J. M.
Linton, S. J. **Behavioral thermoregulation in the spectacled caiman *(Caiman sclerops)*** 479
Lipkin, B. S. **The role of the study section in the NIH peer review system** 61
Livingston, J. W., Jr. **Visual display in the multi-purpose laboratory: The benefits of video scan-conversion** 200
Livingston, J. W., Jr., & Kingsley, S. J. **QUERY: An interactive computer program for the collection of checklist data** 391
Lockard, J. S. **Small interval timer for observational studies** 478
Lynch, J. J. **Use of a generalized analysis of variance program in repeated measures designs having unequal group sizes** (1975, 7, 54-56)–Erratum 308
Lytton, H. See Taerum, T.
Mackinnon, W. J., & Anderson, L. M. **The SPAN III computer program for synthesizing group decisions: Weighting participants' judgments in proportion to confidence** 409
MacNeil C. See MacPherson, R. D.
MacPherson, R. D., MacNeil, C., Marble, A. E., & Reeves, J. L. **Integrated circuit measurement of skin conductance** 361
Madigan, S. **Analysis of variance with APL/360** 390
Manderscheid, R. W. See Rae, D. S. (2)
Marble, A. E. See MacPherson, R. D.
Marriott, J. G., & Voigtman, R. E. **An enhancement to ACT: A stand-alone disk driver compatible with RDOS** 249
Martin, R. A. **Symposium: Hardware innovation and utilization** 112
Mason, R. L. **Digital computer estimation of eye fixations** 185
Massaro, D. W. See Cohen, M. M.
Mathews, N. N. See Poltrock, S. E.
Mays, L. E., & McElligott, J. G. **NEURO-11: A computer system for relating neural spike trains to physiological and behavioral data** 325
McDowell, S. W. **TIMESAMPLE: A FORTRAN IV program for developing time sampling strategies** 29
McElligott, J. G. See Mays, L. E.
McKenzie, K. **A structured approach to microcomputer system design** 123
McKnight, R. R. See Leberer, M. R.
McPartland, R. J., Foster, F. G., & Kupfer, D. J. **A computer-compatible multichannel event counting and digital recording system** 299
McPartland R. J., Kupfer, D. J., & Foster, F. G. **The movement-activated recording monitor: A third-generation motor-activity monitoring system** 357
Mickey, C. T. **A brief history and comparison of several variants of the ACT (automated contingency translator) language** 252
Miklich, D. R., & Austin, D. J. **A high-speed normal random number generator using table look-up** 405
Millward, R. **Standards: Principles, experience, and prospects (abstract)** 204
Morris, J. D. **A computer program to define types by configural frequency analysis** 311
Morris, J. D. **Selecting the best regression equation by maximizing double cross-validation correlation** 389
Morris, J. D., & Morris, L. A. **A generalized computer program for editing narrative text** 401
Morris, L. A. See Morris, J. D.
Mortensen, R. M. See Bremser, R. F.
Moskowitz, H., & Fink, R. K. **A program of a generalized Bayesian algorithm for quality control and auditing** 307
Mourant, R. R., & Smith, J. W. **Modular interfaces for on-line applications** 182
Mullen, S. **FOCLAB: A language for computer controlled psychology research** 229
Oakes, T. W. See Hatcher, M. E.

Oldman, M. **A comfortable attachment for a thermistor respiration transducer** 290
Owens, W. H., Jr., & Capel, W. C. **A note on the use of congruent rewards in survey situations** 531
Palmer, J. See Burkhardt, K. J.
Papert, S. **Constructing cognitive environments (abstract)** 51
Parker, R. M. **Program PROFAN–A profile analysis data converter** 306
Patterson, M. M. See Cassady, M.
Pautler, C. P. See Rae, D. S.
Pettijohn, D. **Electronic windows: A follow-up note** 43
Pettijohn D. **Two-channel random pulse generator** 287
Polit, A. C. **Computer generation of textures** 367
Poltrock, S. E., & Mathews, N. N. **A system for computer control of auditory stimuli** 197
Popper, A. N. **A general-purpose animal holder for dissections** 339
Potts, G. R. **Use of a campus-wide time-sharing computer to run reaction time experiments** 179
Powell, R. S. See Lane, D. M.
Prasad, K. P. See Venkatramaiah, S. R.
Prokasy, W. F. **Random control procedures in classical skin conductance conditioning** (1975, 7, 516-520)–Erratum 308
Prosser, F. See Winkel, D.
Quy, R. J. **An inexpensive solid state unit for free-operant avoidance training** 44
Rae, D. S., Pautler, C. P., Teper, S. A. H., Manderscheid, R. W., & Silbergeld, S. **FORTRAN IV programs for scoring group atmosphere scale (GAS) and class atmosphere scale (CAS) data** 395
Rae, D. S., Vathally, S. T., Manderscheid, R. W., & Silbergeld, S. **Hill Interaction Matrix (HIM) scoring and analysis programs** 520
Ramanaiah, N. V. See Ribich, F. D.
Ramanaiah, N. V. See Wilson, A. J.
Rapoport, A. See Kahan, J. P.
Rayfield, F. **An inexpensive six-digit solid state counter** 419
Reed, A. V. **MODPAC: A modular package of programs for fitting model parameters to data and plotting fitted curves** 375
Reeves, J. L. See MacPherson, R. D.
Ribich, F. D., & Ramanaiah, N. V. **SECOMP: A program for computing simple effects and comparisons in a factorial design** 312
Roberts, T. W. See Stephenson, G. R.
Roccaforte, P. See Wolach, A. H.
Roemer, R. See Cassady, M.
Rossetto, M. See Shapley, R.
Rostron, A. B., & Welbourn, C. P. **A computer assisted system for the extraction and visual display of pitch** 456
Saffer, S. I. See Galosy, R. A.
Scase, C. See Stenn, P. G.
Scheirer, C. J. **A BASIC subroutine to generate random Latin squares** 31
Scheirer, C. J. **Routine to provide a random order for counterbalanced variables** 31
Scheirer, C. J. **A BASIC subroutine to generate random Greco-Latin squares** 403
Schmitt, J. C. **An APL permutation routine for computer search operations** 406
Scott, M. W., & Wilson M. E. **Predicting high blood alcohol levels for animals in a group situation** 465
Sedelow, W. A., Jr. **Grant program for the division of computer research: National Science Foundation (abstract)** 68
Sedelow, W. A , Jr. **Some implications of computer networks for psychology** 218
Shapley, R., & Rossetto, M. **An electronic visual stimulator** 15
Sharp, J. L. See Ashley, T. R.
Sharp, J. L. See Chambers, D. L.
Shavelson, R. See Erlich, O.
Shefner, J. M., & Levine, M. W. **A method for obtaining single cell responses in the optic tract of self-respiring fish** 453
Sidowski, J. B. **Editorial** 50
Sidowski, J. B. **Printout** 35, 331, 414, 473, 522
Sidowski, J. B. **On-line instrumentation in psychology: Dildo or the real thing?** 52
Silbergeld, S See Rae, D. S. (2)
Silverman, E. G., & Howard, J. H., Jr. **A programmable relay and amplifier I/O interface for the PDP-8/E computer** 498
Smith, D. P. B. See Stephenson, G. R.
Smith, J. W. See Mourant, R. R.
Snapper, A. G. **Time-sharing SKED and OS/8: A new version** 80
Snapper, A. G. See Cobez, R. I.
Snapper, A. G. See Dingler, R.
Solso, R. L., & King, J. F. **Frequency and versatility of letters in the English language** 283
Sperling, G. **Movement perception in computer-driven visual displays** 144
Spitzer, C. E. **JACKK: A general jackknifing routine** 302
Stenn, P. G., Covvey, H. D., Scase, C., & Heseltine, G. F. D. **Automated psychophysiology laboratory** 235
Stephens, K., & Barmeier, A. **SKED systems: Paper tape, Tennecomp, and OS/8** 76
Stephenson, G. R., Smith, D. P. B., & Roberts, T. W. **The SSR system: An open format event recording system with computerized transcription** (Re-publication) 259

Sterner, R. T., & Breidenstein, C. P. **Set of ADVANCED-BASIC programs for literature storage and retrieval with minicomputers** 397
Stokey, R. J., & Williams, J. D. **A three-way chi-square program** 30
Stollnitz, F. **NSF programs in the behavioral and neural sciences** 65
Strain, A. R. See Edgington, E. S.
Strelow, E. R., Brabyn, J. A., & Clark, G. R. S. **Apparatus for measuring and recording path velocity and direction characteristics of human locomotion** 442
Strobel, M. G., & Suen, C. Y. **Sound synthesis by minicomputer: System PHON** 384
Suen, C. Y. See Strobel, M. G.
Sunkin, J. See Grabowski, J.
Taerum, T., Ferris, C., Lytton, H., & Zwirner, W. **Programs for the analysis of dependencies in parent-child interaction sequences** 517
Teper, S. A. H. See Rae, D. S.
Tracy, R. J. **A computer-aided procedure for producing interesting assignments for students of applied statistics** 413
Treisman, M., & Fearnley, S. **A simple device for detecting departures from visual fixation** 489
Trochim, W. M. K. **The three-dimensional graphic method for quantifying body position** 1
VanDercar, D. H. **An inexpensive infusion pump suitable for chronic administration of liquids to restrained or unrestrained animals** 487
Vathally, S. T. See Rae, D. S.
Venkatramaiah, S. R., & Prasad, K. P. **A computer program for interpersonal perception method** 463
Voigtman, R. E. See Marriott, J. G.
Waddington, W. See Burkhardt, K. J.
Walker, E., Bauer, J. A., Jr., & Grubin, M. L. **ALICE. A system for manipulating and analyzing multidimensional data** 347
Wallsten, T. S. See Kahan, J. P.
Wang, M. D. **GSCALE: Scalogram analysis for dichotomously scored items** 460
Wang, M. D. **SINFA: Multivariate uncertainty analysis for confusion matrices** 471
Wasserman, E. A. **Successive matching-to-sample in the pigeon: Variations on a theme by Konorski** 278
Weiss, D. J. See DeWitt, L. J.
Welbourn, C. P. See Rostron, A. B.
Williams, D. B. **POLYANOVA: A general-purpose FORTRAN IV program for trend analysis with equally or unequally spaced levels of the independent variable** 315
Williams, D. B., & Hoskin, R. K. **A programmable tone generator for presenting melodic and harmonic patterns in music research** 447
Williams, J. D. See Stokey, R. J.
Williams, T. A. See Cole, E. B.
Williams, T. A. See Giannetti, R. A.
Williams, T. A. See Johnson, J. H.
Williams, T. A. See Klingler, D. E.
Wilson, A. J., & Ramanaiah, N. V. **UMAVC: A program for computing comparisons in multi-factor designs with unequal cell Ns** 319
Wilson, M. E. See Scott, M. W.
Winkel, D., & Prosser, F. **Hardware design style: The vital element** 113
Wirth, P. See Leberer, M. R.
Wolach, A. H., & Roccaforte, P. **Lever for recording fish target bumping** 365
Young, J. L. **Research support from the Office of Naval Research** 66
Youngman, G. H., & Daniel, W. W. **Calculation of Mood's dispersion test statistic using Mielke's adjustment for ties: A program for use on a computer terminal** 469
Zangen, M., Ziegelbaum, P., & Buschke, H. **CLUSTER: A program for identifying recurrent clusters** 388
Zar, J. H. **Two-sample and multisample testing of circular data** 329
Zar, J. H. **Watson's nonparametric two-sample test** 513
Ziegelbaum, P. See Zangen, M.
Zwirner, W. See Taerum, T.

Special Notice 49

STAFF IN AUSTIN

Richard Campbell
Valerie Foster
Della Griffith
Rudolph Griffith
Melanie Kittrell
Patricia Kittrell
Jean Morgan
David Sanford
C. E. Wheeless